DEPARTMENT OF HEALTH AND HUMAN SERVICES

Specimen Management

CDC
CENTERS FOR DISEASE™ CONTROL AND PREVENTION

SAFER • HEALTHIER • PEOPLE™

The Quality System

The result of any laboratory test is only as good as the sample received in the laboratory

The Problem

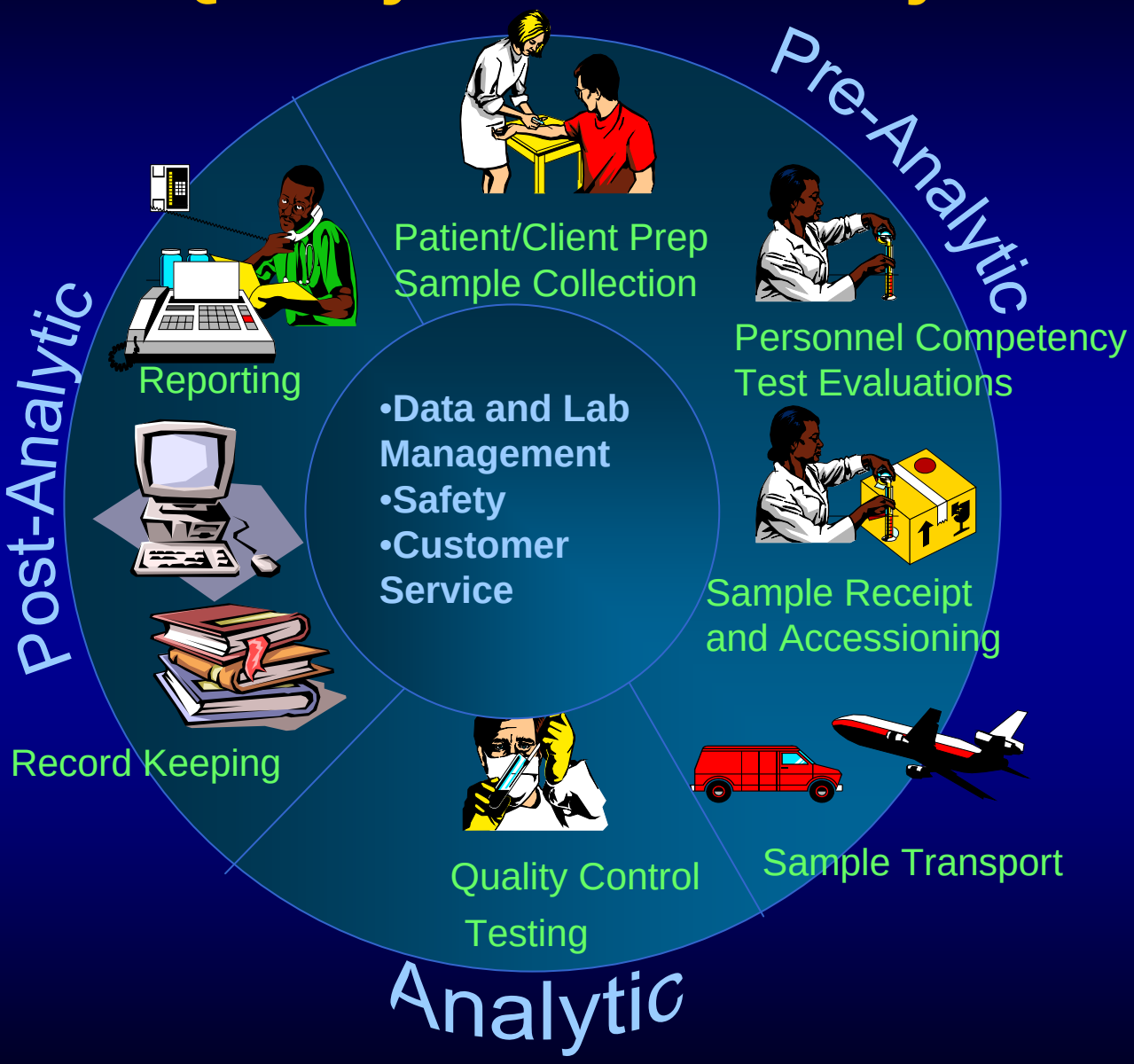
You have arrived for work and notice a urine specimen on the counter with a requisition to perform urinalysis and culture. The requisition form had the patient's name, and ordering physician. Upon examining the urine, you notice that the urine is cloudy and has a strong odor of ammonia.

- How would you proceed?

Specimen Management

- Specimen Collection
- Specimen Transport
- Specimen Handling
- Specimen Referral
- Specimen Storage
- Specimen Disposal

The Quality Assurance Cycle



Impact of Specimen Management on Patient Care

- Essential to accurate laboratory diagnosis
- Directly affects patient care and patient outcome
- Influences therapeutic decisions
- Impacts patient length of stay, hospital costs, and laboratory costs
- Influences laboratory efficiency

Pitfalls

- Saying “yes” to everything
  - Accepting every specimen
- Afraid to say “No” to physicians
  - Someone with sufficient authority MUST support laboratory policy
  - Good lab practice – Patients first!
- Having no boundaries for technical issues

Pitfalls Lead to Errors Resulting In:

- Delays in getting test results
- Unnecessary re-draws/re-tests
- Decreased customer satisfaction
- Increased costs
- Incorrect diagnosis / treatment
- Injury
- Death

Specimen Collection Procedures

- Should include instructions for:
  - Positively identifying the patient before collecting a specimen
  - Required specimen for each requested test
  - Preparation of patient
  - Type of collection container, required volume, timing
  - Preservation of specimen, e.g., transport media
  - Proper specimen labeling
  - Special handling instructions, e.g., refrigeration

Laboratory Handbook

- Compilation of documents that must be made available to all specimen collection areas
- Must be understood by all laboratory staff
- Includes:
  - Name and address of laboratory
  - Contact names and telephone numbers
  - Hours of operation
  - List of available tests
  - Specimen collection procedures
  - Specimen transport procedures
  - Expected turn around times (TAT)
  - How stat requests are handled
- May be referenced in the Quality Manual

Test Requisition

- Patient identification
- Clinical data, where indicated
- Contact info for requesting physician or authorized individual
- Tests requested
- Time and date of specimen collection
- Source of specimen, when appropriate

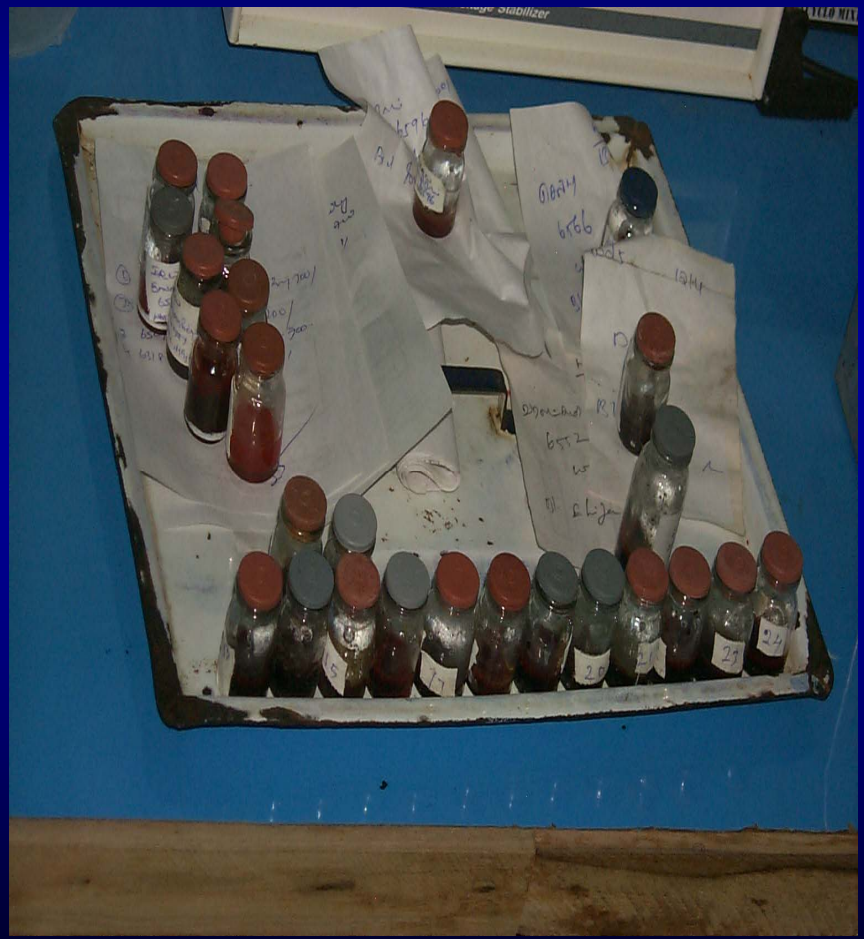
Specimen Collection: Laboratory Responsibilities

- Verify completeness of test request
- Verify integrity of the specimen
  - Determine adequacy of specimen
  - Appropriately labeled, legible identification
  - Determine if appropriate specimen was submitted for requested test
  - Identifier of the collector, e.g., phlebotomist, patient
- Enforce procedures for handling sub-optimum specimens
  - Specimen rejection criteria

Specimen Rejection Criteria:

- Unlabeled specimen
- Insufficient patient information
- Hemolyzed specimen
- Wrong tube drawn
- Wrong specimen submitted
- Inadequate volume for the amount of preservative
- Insufficient quantity
- Prolonged transport

Specimen Handling



Specimen Handling

- Handle all specimens as if infectious
- Use tracking system for all specimens:
  - Accession / logging process
  - Confirm actual receipt of specimens
  - Date and time of specimen receipt
  - Track aliquots – traceable to the original sample

Specimen Handling

- Establish procedures for handling:
  - Stat / urgent requests
  - Delayed testing, e.g., storage, separation of serum/plasma from cells
  - Leaking containers
  - Contaminated forms
  - Preservation of specimens

Specimen Transport

- Train personnel in appropriate safety and packaging procedures
- Package and preserve specimens appropriately
- Transport specimens at appropriate temperature
- Determine acceptable transport time
- Determine mode of transport
  - Courier, ambulance, clinic/lab staff
- Adhere to the International Air Transport Association (IATA) regulations

The Dangerous Goods Regulations

- Covers:
  - Packaging
  - Labelling Packages
  - Packing Instructions
  - Documentation
  - Training
- Are updated annually by IATA

Specimen Referral

- Record:
  - Tests / specimens referred
  - Date of referral
  - Name of person referring test
- Monitor / Track, and Record:
  - Turnaround time
  - Results delivery (from referral lab, to requestor)
  - Problems with referral

Specimen Storage

- Establish policy
  - What should be stored?
- Determine retention time
- Determine storage location
  - Consider ease of access
- Assure proper storage conditions
- Indexing of specimens
  - By day of receipt or accession number

Specimen Storage

Serum Banks:

- Establish tracking procedures
  - Encourage use of information technology
- Maintain an organized, accessible storage system
- Monitor freeze/thaw cycles

Specimen Disposal

Specimen Disposal

- Develop policy for disposal of medical waste
  - Establish and follow disinfection procedures
  - Comply with local regulations
  - Include policy of disposal of rejected specimens
- Appoint someone with oversight responsibilities
- Establish a schedule to review all stored specimens

Summary: Avoiding Pitfalls

- Remember good laboratory practice
  - Patients first!
- Train all personnel responsible for collecting, handling, storage, transport of specimens
- Monitor rejection log
- Routinely communicate with customers
- Update handbook, procedures when methods change